

ABSTRACT

An exemplary wireless communication network that includes a base that communicates with remote units located in a cell of the network. A base concatenates information symbols with a preamble corresponding to a destination remote unit. One or more remote units communicating with a base each concatenates information symbols with a preamble corresponding to that remote unit. An adaptive receiver system for a base unit rapidly adapts optimal despreading weights for reproducing information symbols transmitted from multiple remote units. A transmitter system for a base unit concatenates information symbols with a preamble associated with a remote unit in the cell. An adaptive receiver system for a remote unit in a communication network rapidly adapts optimal weights for reproducing a signal transmitted to it by a specific base unit in the network. A transmitter system for a remote unit in a cell of a communication network which concatenates information symbols with preamble associated with the remote unit. A base initiates communication with a desired remote unit by transmitting an initiation codeword in a selected entry slot. One or more remote units each initiates communication with a base by transmitting an initiation codeword associated with the remote unit in a selected entry slot. A remote unit synchronizes in time and frequency to the base using a sequence of synchronization signals transmitted by the base in a number of entry slots.